PRESS RELEASE

Spin-off Fusion Bionic Wins Fraunhofer Founder Award 2024

Bionic Revolution in Surface Treatment

(Munich/Dresden, 02/20/2025) On February 19, 2025, the Fraunhofer Founder Award, endowed with 50,000 euros, was presented to Fusion Bionic GmbH. The Fraunhofer Institute for Material and Beam Technology IWS's spin-off impressed with its bio-inspired laser technology, creating a new standard in ultrafast surface processing for a wide range of industrial applications.

Surface technology is a driver of future innovation and crucial to the sustainability of products and processes, the reduction of adverse environmental impacts, and the promotion of resource efficiency. The high-tech start-up Fusion Bionic applies bio-inspired principles, such as the lotus effect, to technical surfaces using an ultra-fast laser process. The resulting bionic effects are based on extremely fine micro- and nanotextures that significantly improve the performance of surfaces and open up a wide range of innovative approaches in industries such as semiconductor technology, photovoltaics, and glass.

Disruption through Efficiency and Precision

Fusion Bionic's laser technology integrates seamlessly into existing manufacturing processes and brings nature-inspired structural designs directly onto surfaces. Surface engineering can make a decisive difference in user performance: Photovoltaic modules, for example, gain self-cleaning properties, heat exchangers become more energy-efficient, and PFAS-free textiles become water-repellent. Fusion Bionic's innovative laser technology can increasingly replace costly or environmentally problematic processes such as chemical etching, sandblasting, or plasma. As a result, companies can significantly increase their energy efficiency, reduce CO_2 emissions, and avoid environmentally harmful emissions.

Leading-edge Research as Asset in the Global Market

Fusion Bionic's solutions are based on direct laser interference patterning (DLIP), a high-speed laser technology up to 100 times faster than established methods. Fusion Bionic offers services spanning application development, technology training, contract manufacturing, and hardware solutions based on DLIP technology. In April 2021, Fusion Bionic GmbH was spun off from Fraunhofer IWS with a team of researchers led

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by Dr. Tim Kunze and experts from the industry. It was supported by Fraunhofer Venture and Fraunhofer AHEAD in all phases of the founding process.
In 2022, Fusion Bionic was awarded the Ray of Hope Prize by the US Biomimicry Institute as one of the best nature-inspired start-ups worldwide. In the same year, it received further recognition in the form of the Saxon Start-up Award and 2nd place in the Innovation Award Laser Technology, jointly organized by AKL Arbeitskreis Lasertechnik e. V. and European Laser Institute ELI e. V.
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Technology Transfer as Symbiosis of Research and Progress

"Spin-offs offer the ideal opportunity for building a vibrant ecosystem centered on the research institute, from which start-ups and Fraunhofer will benefit in the long term. We are proud of our Fraunhofer roots and grateful for the support we have received from Fraunhofer IWS. The Founder Award motivates us more than ever to push forward with our vision: to work together to set new standards for innovative surfaces and develop new technological possibilities for companies. We very much look forward to continuing down this path with great energy," says Dr. Tim Kunze, CEO and co-founder of Fusion Bionic GmbH.
After the award ceremony, Thomas Doppelberger, Head of Spin-offs and Shareholdings (Fraunhofer Venture), emphasized the close connection between research and commercialization: "The team of Fusion Bionic has demonstrated how leading-edge research can turn into effective innovations for German and international industry in a short period. Merely a few years after its spin-off, Fusion Bionic is already setting new standards in surface technology, demonstrating the immense potential of technology transfer from research."
"As a driver of innovation, Fraunhofer serves as an ideal catalyst for outstanding tech start-ups in Germany. Founders from the Fraunhofer-Gesellschaft benefit from strong start-up and financing conditions, which are made possible by the close partnership between HTGF and the Fraunhofer-Gesellschaft," adds Dr. Alex von Frankenberg, Managing Director of High-Tech Gründerfonds.

Materials and Lasers – Competence with a System: **The Fraunhofer Institute for Material and Beam Technology IWS** develops complex system solutions in materials and laser technology. We define ourselves as idea drivers developing customized solutions based on laser applications, functionalized surfaces as well as material and process innovations – from easy-to-integrate custom solutions to cost-efficient solutions for small and medium-sized enterprises to industry-ready one-stop solutions. Our research focuses on aerospace, energy and environmental technology, automotive, medical and mechanical engineering, toolmaking, electrical engineering and microelectronics, and photonics and optics sectors. In our five future and innovation fields of battery technology, hydrogen technology, surface functionalization, photonic production systems and additive manufacturing, we are already creating the basis today for the technological answers of tomorrow.

Info Box

About the Fraunhofer Founder Award

The Fraunhofer Founder Award was created as part of the Fraunhofer-Gesellschaft's new spin-off and participation strategy and was awarded for the first time in 2016. It goes to a spin-off with an active, successful market presence that benefits society through its products and services. With this award, Fraunhofer Venture and High-Tech-Gründerfonds wish to honor outstanding start-up projects and promote spin-offs within the Fraunhofer-Gesellschaft.

Info Box

About Fusion Bionic

Fusion Bionic uses a high-speed laser to transfer bio-inspired mechanisms from lotus leaves or moth eyes to technical surfaces. The application of biomimetic functions has the potential to significantly increase individual surface performance and enable the next generation of products. Fusion Bionic's solutions are based on direct laser interference patterning (DLIP), a high-speed laser technology up to 100 times faster than established methods. The high-speed functionalization via DLIP allows for creating high-performance surfaces with self-cleaning properties, reduced friction in tribological systems, improved adhesion, increased biocompatibility of implants, and more.
www.fusionbionic.com

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About High-Tech-Gründerfonds

HTGF is one of the leading and most active early-stage investors in Germany and Europe, financing start-ups in the fields of Deep Tech, Industrial Tech, Climate Tech, Digital Tech, Life Sciences, and Chemistry. With its experienced investment team, HTGF supports start-ups in all phases of their development into international market leaders. HTGF invests in pre-seed and seed phases and can participate significantly in later-stage financing rounds. Across its funds, HTGF has over 2 billion euros under management. Since its inception in 2005, HTGF has financed over 770 start-ups and achieved almost 200 successful exits.

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Fund investors in the public-private partnership include the German Federal Ministry for Economic Affairs and Climate Action, KfW Capital as well as 45 companies and family offices. For more information, please visit HTGF.de or follow us on LinkedIn.

Info Box

About Fraunhofer Venture

Fraunhofer Venture represents the central spin-off and stake management unit of the Fraunhofer-Gesellschaft. Through an extensive support program, it provides founders, start-ups, industry, and investors with access to the cutting-edge technologies of the 76 Fraunhofer institutes, the Fraunhofer infrastructure, and Fraunhofer expertise with over 7,600 patent families. Services provided by Fraunhofer Venture cover every aspect of support and advice — from the initial idea to the founding of the company, from actively managing Fraunhofer shareholdings and assisting with the search for funding to the potential sale of the company.
www.fraunhoferventure.de

The Fraunhofer Founder Award 2024 was presented to Fusion Bionic GmbH during the Fraunhofer Netzwert symposium: Hubert Aiwanger (Bavarian Minister of State for Economic Affairs, Regional Development and Energy and Deputy Bavarian Minister President), Dr. Sabri Alamri (co-founder of Fusion Bionic GmbH), Laura Kunze (co-founder of Fusion Bionic), Dr. Alex von Frankenberg (Managing Director of HTGF), Tim Kunze (co-founder Fusion Bionic) and Prof. Dr. Holger Hanselka (President of the Fraunhofer-Gesellschaft) (from left to right)
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The winning team from Fusion Bionic GmbH: Dr. Sabri Alamri, Laura Kunze, Benjamin Krupop, and Dr. Tim Kunze (from left to right)
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